

REMARKS

I. INTRODUCTION

Claims 39, 41-50 and 52-60 are currently pending. The Examiner has rejected claims 39, 41-50 and 52-60 under 35 U.S.C. § 112, first paragraph, and has rejected claims 39 and 50 under 35 U.S.C. § 102(b). In view of the foregoing amendments and following representations, allowance of this application is most respectfully requested.

II. REJECTION UNDER 35 U.S.C. § 112, ¶1, ENABLEMENT

Claims 39, 41-50 and 52-60 are rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the enablement requirement. For the reasons set forth in detail below, Applicants respectfully submit that the claims fully comply with the enablement requirement of section 112 and request that this rejection be withdrawn.

In explanation, the Examiner states:

Given the data of record, it is not clear whether there are any combinations of dopant and host materials that actually meet all dopant/host limitations of the present independent claims. Given the large number of phosphorescent materials and electron transporting materials, and the showing that at least some of the exemplary combinations disclosed in the specification do not meet the claim limitations even though teachings in the specification suggest that they do, it is the examiner's position that it would require undue experimentation on the part of one skilled in the art to make the claimed invention.

Office Action dated November 1, 2007, page 5. Applicants respectfully disagree with the Examiner's position. For the reasons set forth in detail below, Applicants respectfully submit that the claims fully comply with the enablement requirement of section 112 and request that this rejection be withdrawn.

Applicants respectfully submit that an adequate basis for the rejection 35 U.S.C. § 112, first paragraph, is not provided by the fact that certain embodiments disclosed in the application may not meet all of the recited claim elements, particularly when the methods for

determination of the recited material properties and for fabrication of the recited devices were routine in the art. A person of ordinary skill in the art would be familiar with the techniques used to measure the HOMO and LUMO of a given material. Such measurement techniques for the HOMO and LUMO were routine in this field. Thus, the determination of the HOMO or LUMO of a particular material would not constitute undue experimentation.

The test for enablement is whether a person skilled in the art could make and use the invention as claimed without undue experimentation. *United States v. Telectronics, Inc.*, 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988) (“The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation.”). A patent need not teach, and preferably omits, what is well known in the art. *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991). The fact that experimentation may be complex does not necessarily make it undue, if the art typically engages in such experimentation. *In re Certain Limited-Charge Cell Culture Microcarriers*, 221 USPQ 1165, 1174 (Int'l Trade Commission 1983), *aff'd. sub nom., Massachusetts Institute of Technology v. A.B. Fortia*, 774 F.2d 1104, 227 USPQ 428 (Fed. Cir. 1985). *See also In re Wands*, 858 F.2d at 737, 8 USPQ2d at 1404. The test of enablement is not whether any experimentation is necessary, but whether, if experimentation is necessary, is it undue. *In re Angstadt*, 537 F.2d 498, 504, 190 USPQ 214, 219 (CCPA 1976). A specification disclosure which contains a teaching of the manner and process of making and using an invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as being in compliance with the enablement requirement of 35 U.S.C. §112, first paragraph. MPEP § 2164.01.

The Examiner does not identify any limitation that allegedly lacks enablement. Rather, the Examiner bases the rejection on the fact that the combination of Ir(ppy)₃ with

TAZ or BCP from certain Examples would not meet the claim limitation specifying that the LUMO of the emissive material be lower than the LUMO of the host material. Applicants respectfully submit that this does not indicate in any way that the present claims lack enablement.

The present invention relates to organic light emitting devices having increased efficiency. The increased efficiency stems from the use of a phosphorescent dopant material that has a triplet energy that is less than the triplet energy of the host material and through “charge-trapping” on the phosphorescent dopant. Applicants provide the method for the device fabrication. Applicants also provide a description of the criteria for charge trapping on the dopant material. See Specification at page 7, lines 1-10; page 7, line 15 – page 8, line 12; page 12, line 21 – page 13, line 2. A person of ordinary skill in the art would be familiar with the techniques used to determine the HOMO and LUMO of a given material, as such measurements of the HOMO and LUMO are routine in this field. Moreover, none of the present claims require the combinations of host and dopant cited by the Examiner. Thus, Applicants respectfully submit that a person skilled in the art could make and use the invention as claimed without undue experimentation.

III. REJECTION UNDER 35 U.S.C. § 102(b)

The Examiner has rejected claims 39 and 50 under 35 U.S.C. § 102(b) as anticipated by Baldo et al. in *Nature* **1998**, 395, pp. 151-154. For the reasons set forth below, Applicants respectfully submit that Baldo et al. does not disclose, expressly or inherently, each limitation of the claims 39 or 50.

The Examiner states that “the combination of Alq₃ and PtOEP also meet the triplet state energy of the phosphorescent dopant material and the electron transporting host material as required by the present claims.” Applicants respectfully submit that the combination of Alq₃ and PtOEP does not meet the triplet energy relationship recited in the claims. The

claims require that “the phosphorescent dopant material has a triplet excited state with a triplet state energy that is less than the triplet state energy of the lowest triplet excited state of the electron transporting host material.” It is Applicants’ understanding that the triplet energy level of PtOEP is not less than the triplet energy level of Alq₃. Rather, within the limits of the determination techniques, the triplet energy for PtOEP and Alq₃ are the same. This is confirmed by Lamansky et al. (U.S. 2002/0182441), which was cited by the Examiner. Lamansky et al. disclose that the triplet energy of Alq₃ and PtOEP are 2.0 ± 0.1 eV and 1.9 ± 0.1 eV, respectively. Within the experimental error, these reported triplet values are the same. Thus, Applicants respectfully submit that Baldo et al. do not teach or suggest each limitation of claims 39 or 50, and respectfully request that the rejection be withdrawn.

V. CONCLUSION

Applicant respectfully submits that the pending claims are in condition for allowance and requests that such action be taken. If for any reason the Examiner believes that prosecution of this application would be advanced by contact with the Applicant’s attorney, the Examiner is invited to contact the undersigned at the telephone number below.

Respectfully submitted,
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Dated: February 1, 2008

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